

the eversion of the foot, and consequent isolation and removal of the end of the tibia. The subsequent removal of the injured portions of the astragalus, or, if necessary, the whole of it, will be comparatively easy.

In justice to myself, I should state that the experiments upon the cadaver, which lead to these conclusions, were instituted without any knowledge of the operation as laid down by the elder Moreau, although alluded to by Mr. Hancock in his article. Subsequently, while searching for information upon this subject, with a view to the preparation of this article, I came across the procedure of the elder Moreau in Malgaigne's *Operative Surgery*. It will be observed, by referring to it, that he does not recommend the eversion of the foot in order to facilitate the removal of the end of the tibia. For this latter modification, and the connection of the vertical incisions across the instep, we are indebted to Mr. Hancock. The one I deem an important improvement. In regard to the other, I am sure, upon reflection, Mr. H. will agree with me that it is entirely unnecessary, and, in consequence, unwarrantable.

ART. V.—*On Symptomatic Bronchial Irritation.* By A. P.
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OF the number and severity of diseases of the respiratory organs which cause great mortality, a larger proportion than is generally supposed have their origin in derangements of the digestive and uterine systems, of which they are symptomatic. These cases simulate bronchial irritation from other causes so closely, that it is not always an easy matter to discriminate between the idiopathic and symptomatic affections, and the disease in both forms is often mistaken, in its latter stages, for tubercular phthisis. Not unfrequently is it the case, indeed, that in strumous subjects the predisposition to tubercular phthisis finds its development in the influence of bronchial irritation as an exciting cause, and without which such predisposition might have lain dormant for a lifetime. The prostration of vital energy which is the common effect of mucous disease under every form, is well calculated to invite this development of phthisis, which is only restrained in tubercular subjects by invigoration and tonicities. Hence the frequent occurrence of tubercular phthisis as a sequela of enteric or typhoid fever, especially if active disease of the mucous tissue be long continued.

Symptomatic bronchial irritation generally has its origin in various causes acting previously upon the mucous membrane of the digestive organs. An undue and long-continued indulgence in the use of stimulating food, alcoholic drinks, tobacco, opium, capsicum, and all those indulgences and ex-

cesses common to good living, tend to derange the functions of the mucous membrane of the digestive organs, causing indigestion, disorder of the bowels, and general debility, with vitiated secretions throughout the intestinal tube, and resulting in bronchial irritation as a symptomatic affection, which is likely to lead rapidly to a fatal result.

More commonly still, perhaps, are those primary derangements of the mucous tissues due to *sedentary and inactive habits of life*, causing an undue determination of blood to certain abdominal viscera, and consequent congestion of the mucous membranes lining those viscera, and this is followed sooner or later by a similar condition in the linings of the bronchi under the influence of sympathy. Numerous classes suffer in this way. Men who are confined to the labours of the counting-house, whether sitting or standing, or in sedentary mechanical labour, whatever may be their habits in regard to eating and drinking, are very liable to suffer from indigestion and constipation. More commonly still do women of sedentary habits, sewing girls who sit at their work in close and overheated rooms twelve or thirteen hours a day, and factory girls whose occupation requires them to stand an equal length of time, contract habitual constipation, accompanied by great torpor and hyperæmia of the mucous membrane of the colon and rectum. In females this condition is soon communicated by sympathy, to the mucous membranes of the organs of generation, causing first excessive, then deficient, and finally a total suspension of menstruation, substituting those serous exudations which generally accompany hyperæmia of the mucous membranes. In all these cases of disorder arising from vicious habits, the powers of digestion are impaired, and the irritation produced in the mucous membrane of the digestive organs and uterus, is communicated to the sympathizing mucous tissue of the bronchial tubes, and the subject lingers and dies, a victim to imprudence and neglect.

I have mentioned the *habitual use of tobacco* as one of the causes of disease in the mucous tissues, and we have abundant proof that they who use it by chewing, smoking, and snuffing are sufficiently punished for the unnatural indulgence, by impairment of health. But there is a more injurious method than any of these, in which tobacco is habitually used, and which has not been sufficiently noticed by medical authors. It is commonly called "*dipping*." There is a large portion of the Southern States, embracing North and South Carolina, Tennessee, the northern parts of Georgia, Alabama, Mississippi and Louisiana, all of Arkansas, and a considerable portion of Texas, in which this habit prevails among females, and is handed down from mother to daughter as a hereditary curse. It is confined, so far as I have observed, to the female sex, and consists in applying snuff, mostly fine Scotch snuff, to the teeth and gums by means of a sort of brush made of a stick or a piece of hickory bark, chewed into a brush-like form at one end. This is moistened, dipped into the dry snuff, and thus the powder is conveyed into the mouth in any quantity desired. Those who

have been long addicted to the habit carry the brush pretty constantly in the mouth with one end projecting from the lips.

The better classes are more careful to escape observation, but the habit grows upon those who indulge in it until it becomes the most inveterate of any connected with the use of narcotics. Reformations are exceedingly rare, and the victims find it difficult to substitute the use of tobacco in any other form. Chewing, smoking, and snuffing will not satisfy the cravings of the unnatural appetite. The mucous membrane of the whole intestinal canal becomes plastered with a pasty coating of snuff-powder, as I have ascertained by autopsic examination, and it seems necessary that this coating be maintained or a state of wretchedness ensues which greatly unsettles the mind. The skin after a while assumes very nearly the colour of the snuff, so that from this alone dippers are readily distinguished. The circulation of blood in the skin becomes sluggish, no longer responding readily to displacement by pressure, or to that nervous influence which causes the modest blush. The conjunctivæ are also tinged by the colouring matter of tobacco, and the vision of youth prematurely fails. Deafness is not an uncommon effect of this habit, and the whole nervous system appears so impaired in healthful vigour, as to affect every sense and every function of the body.

The mucous membrane of the internal organs of generation becomes diseased and the uterine functions impaired. The cervix and body of the uterus are swollen, while the vagina and suspensory ligaments are relaxed, giving rise to prolapsus and other displacements. Miscarriages are common, child-bearing sometimes ceases entirely, and there is reason to believe that children born of such women rarely fail to suffer, both in body and mind, the degenerating influences of this vicious habit of their mothers.

In nearly all these cases the stomach performs its office imperfectly, and the woman is subject to obstinate fits of indigestion and vomiting, ejecting not only the food and secretions, but the snuff which has accumulated in that organ. The bowels are torpid and habitually constipated, with occasional alternations of diarrhœa. The secretions are vitiated and mostly discoloured, like the skin and mucous membranes. The mind becomes irritable, dejected, and perverted, causing discontent and unhappiness, and the whole system is debilitated, with emaciation and œdematous swellings. Remedial measures fail to produce anything more than temporary relief while the cause of all this disorder is continued, and, as in other cases of nervous and functional disturbance of the mucous tissues, the life of the patient is sometimes ended by tubercular phthisis, or by symptomatic bronchial irritation closely simulating that dreadful disease; and in either case the term consumption is applied.

Independent of the influence of this vicious habit, idiopathic disease of the mucous membrane of the organs of generation is probably the most common form of what is called uterine disease, and the form which is most

likely to involve the derangement of the digestive and respiratory functions by sympathy. The sympathy so well understood to exist between the uterus and the stomach, is scarcely more intimate than that between the stomach and the lungs, and nothing is more common than to meet with evidences of such sympathies in the management of the diseases of these several organs. It is a complication to be closely studied, and it is an error, I apprehend, to suppose, that these diseases of the mucous tissues can in general be cured by local treatment alone. There can be no doubt of the usefulness of iodine and nitrate of silver as local applications to the throat, the bronchi, and the uterus, if not also to the coats of the whole intestinal canal; but that long-continued and chronic disease of these mucous tissues are to be cured by such limited means, ought not to be expected, and the hope is, in my opinion, not often realized. Probably the common dependence upon such local treatment has been encouraged by the practice of specialists, who, whatever may be the extent of their knowledge of pathology in general, are apt to confine their attention pretty much to the local affection they are accustomed to treat. The mucous tissues are too important a part of the animal economy, too closely associated among themselves and with other tissues, by nervous sympathy, and too influential in their functional relations, and over glandular and nervous action in general, and over the constitution of the blood, to be restored to health in all their parts by any remedies that can be applied to certain mucous surfaces. Sad mistakes are made in regard to this matter, prolonging the sufferings of patients, and leading in many cases to a fatal issue, either in true phthisis, or in symptomatic bronchial irritation closely resembling phthisis.

The bronchial secretion caused by symptomatic irritation is not to be confounded with that of pulmonary catarrh or with bronchorrhœa, which are either idiopathic affections, proceeding from some external cause, or the sequelæ of bronchitis, and are not necessarily dependent upon disorder of other mucous tissues. These preternatural discharges from the respiratory mucous membrane, caused by local excitement, may be acute and temporary, as in a common cold, or chronic and enduring, sometimes continuing even for a lifetime, and with scarcely more injury to the general health than the reduction of physical strength which results from excessive secretion. Nor is this symptomatic disease to be mistaken for that which is now so common and fatal, a sequela of imperfectly cured pneumonia. This simulates phthisis, perhaps, still more closely than the bronchial or membranous affection, but proceeds, mainly, from hyperæmia and hypertrophy of the parenchyma, resulting in ulceration and the formation of vomicæ, sometimes in atrophy. Since pneumonia has, more than formerly, come to be treated upon the expectant plan, and with much alcoholic stimulation, and especially when, in malarial districts, the periodic character of the disease is ignored in the treatment, this sequel would seem to have

become more common, and it is some confirmation of this view that mortuary reports show an increase in the proportion of cases of consumption.

It is all the more important to be able to discriminate between the idiopathic and symptomatic disease, because the treatment indicated in the two cases is in some respects different. The irritation existing in the mucous membrane of the throat and bronchial tubes, as well as in the parenchyma of the lungs, the effect of fever, of tuberculosis, or of stimulating vapours, finds remarkable relief in the proper employment of opiate remedies. The reason is, perhaps, that this irritation exists independently of any considerable derangement of the secretions connected with the process of digestion. I have generally found that whenever these are much impaired by febrile disease or other cause, opium is more or less injurious, because of its tendency to intensify the difficulty.

Now the cough mixtures in common use, and especially those which are sold so abundantly, and bought so anxiously by this class of patients, as secret nostrums, are nearly always dependent upon opium in some form for their beneficial effects. The sufferer from bronchial irritation generally finds sufficient encouragement in their continued and habitual use in the fact that they do allay to some extent the troublesome cough, and secure for the patient a considerable degree of comfort and repose. In many cases too there is, connected with indigestion, such persistent diarrhoea as encourages the use of these opiate mixtures to restrain it. Nothing appears more reasonable, therefore, as certainly nothing is more common, in these disorders of the mucous tissues, than that the patient, and sometimes the physician also, should attach importance to these cough mixtures as proper remedies for every kind of bronchial irritation. However suitable they may be to the disease existing in the respiratory organs, their inevitable effects are, to increase the morbid condition of the mucous membrane of the digestive system, and to restrain the healthy secretions of the liver and kidneys.

But the particular form of disease to which I wish to invite attention is, that continued symptomatic irritation of the pulmonary mucous membrane, causing first increased natural secretion and expectoration, and afterward more copious vitiated bronchial discharges, the effect of primary irritation of the mucous tissues of the organs of digestion and generation. Whenever this symptomatic disease becomes established in the lungs and throat, other abnormal affections soon appear in the glandular structures sympathizing with the mucous tissues. The skin becomes dry and husky, and sometimes desquamatorious; the urine scanty, high-coloured, often tinged with blood, and the bladder so irritable as to require that it be frequently discharged, and the stools afford evidence of a want of bile and of healthy intestinal secretions. There is dryness of the tongue, with a smooth and florid surface, often disfigured with fissures and patches, viscid saliva, perversion of the sense of taste, hardness, tenderness, and more or less tension

of the abdomen, intestinal flatulence and obstinate constipation sometimes attended with diarrhœa. In females the uterine functions are first impaired and then suspended, with the frequent concomitants of constipation and hæmorrhoids.

In adopting a plan of treatment for this complicated and difficult disease, regard must be had to its history. The portion of mucous membrane first disordered is apt to be the most troublesome to manage, and it often happens that nothing more than a temporary alleviation can be secured while the original complaint remains unsubdued. In a large majority of cases of disease of the mucous tissues, the digestive organs are primarily affected, even when in its progress the most obstinate feature is the uterine or bronchial disorder. It sometimes begins in the stomach, constituting a form of dyspepsia, and sometimes in the large intestines, quickly affecting by sympathy the lining membrane of the uterus and vagina.

It is not my intention to describe all the different stages of the disease, or refer to all the remedial measures to be applied, which would extend this article to an inconvenient length; but there are anomalies in both the disease and in the action of remedies, which it is of importance to notice. The susceptibility of the bowels to the influence of cathartics, when the principal irritation is confined to the stomach and the small intestines, and the reverse condition when it originates in and is principally confined to the rectum and colon, is remarkable. In the former case, small doses of mercurial medicines are effective as both alteratives and cathartics, but in the latter, there is a specific virtue in aloes, which gives it great prominence as a remedy, and especially in view of its influence over the uterine disease so commonly existing as a symptomatic affection. Aloes may be used either in the solid or the liquid form, and in either case I have generally found the ancient compound of aloes and canella the best. It may be given in pills or in tincture, but in some cases, especially in those giving rise occasionally to copious watery stools, myrrh becomes a good adjuvant remedy. I suspect it to be a mistake to suppose that aloes frequently causes hæmorrhoidal affections. The rectal secretions become somewhat acrid under its influence, and, when long continued, it sometimes causes soreness, pain, and even swelling at the verge of the anus, but these soon disappear when the remedy is suspended. The affection is not hæmorrhoidal in its character, but, on the contrary, aloes is among our best remedies for this disease. The counter-irritation and relief of constipation produced by aloes, acting, as it does, mainly on the mucous membrane of the rectum, has an important remedial efficacy in the cure of both the uterine and the bronchial irritation, symptomatic of the intestinal disease.

Without pursuing this discussion to an inconvenient extent, I shall endeavour to subserve my original purpose by presenting, somewhat in detail, a remarkable case of what I have considered symptomatic bronchial irritation, cured by a very simple course of treatment, and illustrative of my

views in reference to this disease occurring as a consequence of indigestion from imprudent living.

On the 7th of October, 1855, I was requested to visit Colonel K., an old and experienced merchant of Memphis, Tenn., in consultation with three other physicians, all of whom had been in attendance on the case previously. The disease was called pulmonary consumption. The patient was emaciated, exceedingly feeble, with quick and weak pulse, laboured breathing, speaking only in almost inaudible whispers, loathing food, and expectorating largely. The matter expectorated was of a viscid, semi-purulent character, of a brownish colour, and intolerably offensive odour. Presuming that his physicians were correct in their unfavourable prognosis in this case, and not believing that I could render any valuable assistance, I begged to be excused from any agency in the treatment, and was about to withdraw, when I was informed that it was the earnest wish of the patient and his friends that I should take the sole charge of his case. To this I objected, as it seemed little short of folly for me to undertake the treatment of a dying man, who was already provided with a superabundance of able medical counsel. But the importunities of the patient and his friends were strong, and all the attending physicians concurring, I consented.

When left alone with my patient, I found his physical powers so exhausted, and his condition apparently so hopeless, that I hesitated whether I should attempt to do anything more than try to sustain and comfort him during the brief period that he seemed destined to survive. It appeared to me, indeed, that impending dissolution was so imminent as to preclude the propriety of active medication. But upon making such examination of his chest as he was able to bear, and learning the history of his disease, I had reason to suspect that it had been primarily a dyspeptic affection, and that the existing bronchial disease was symptomatic. I soon became convinced, too, that no part of the expectorated matter was the product of abscess in the lungs, as had been supposed. I administered half a grain of calomel and a drop of creasote, advised brandy and nourishment, most of the latter being by enemata, and left him for the night, half inclining to the belief that he would not survive until morning.

Early the next morning I found he had had a large, feculent, and very offensive stool, without increase of prostration, but he declared that he had passed the night without sleep. His loathing of food was somewhat less than it had been, his wife expressing surprise that he did not retch to vomit on her approaching his bedside with a cup of tea. I now gave him a quarter of a grain of calomel, with a drop of creasote, and advised the continuance of the brandy and nourishment as before. I arranged, also, for a moderate inhalation of the vapour of iodine every two or three hours. In the evening he appeared a little improved, having had two dejections from the bowels of the same kind as before, and succeeded in retaining a cup of chicken broth; but he expressed the opinion that my doses were too strong for him. Advising the continuance of the iodine inhalations, and repeating the creasote, I left him for the night without other remedies. His expectorations had been, hitherto, nearly a quart in twenty-four hours, the larger portion being at night. On this occasion he repeated his expressions of confidence in my treatment, and whispered in my ear, by way of encouragement, "I am a good deal better."

During the night his bowels acted three times, not largely, but he felt the prostrating effects, and said, "That little pill you gave me must have

been very strong medicine." His expectoration had been somewhat less copious, and the sputa were less offensive to the smell. I now repeated the calomel, a quarter of a grain, and gave one-fifteenth of a grain of strychnia. The latter was repeated three times during the day, and a drop of creasote was given with each dose. He used the iodine inhalations more freely, under the impression that they gave relief to his cough, and more nourishment was taken into his stomach, and retained. Still he had a disrelish for all kinds of food, was unable to raise his head from the pillow, and could speak only in whispers. At night he had had no further action of the bowels, and his expectorations were less copious. The calomel was repeated, and the strychnia, creasote, and iodine inhalations were continued.

He had two stools during the night, which, without being watery, were thin, of a yellowish colour, and much less offensive to the smell. His expectorations had been less copious and offensive, and he said he had enjoyed some refreshing sleep. For the first time, he now expressed a wish for food, but, after eating a little, he pushed the food away, and said, "I have no appetite after all." From this time onward the calomel was continued in doses of one-quarter of a grain, morning and night, strychnia, in doses of one-fifteenth of a grain, and one drop of creasote was given three times a day, together with iodine inhalations. His bowels were moved two or three times daily; his appetite improved, the expectoration steadily decreased and lost its offensive odour, and he gradually recovered his voice.

When he had continued this course for ten days, he declared that he was unable to restrain his appetite, and he gained strength rapidly, taking, for more than a month afterward, one-third of a grain of calomel every night, to the exclusion of other remedies excepting the iodine inhalations, which were continued. His cough disappeared entirely, and his health became better than it had been for many years previously. He died some years afterward, without any return of the pulmonary disease.

In this case the disease originated in the stomach and small intestines, and the mucous membrane of the colon and rectum did not appear to be disordered to much extent. It was a remarkable case of symptomatic bronchial irritation, baffling the diagnostic skill of able physicians. The remedial efficacy of small doses of calomel in restoring the impaired secretions is strongly exemplified in this treatment. While the treatment was designed for the relief of bronchial irritation, without reference to the original disease, the severity of which may, indeed, have been enhanced by the use of anodyne expectorants, there could be no hope of a permanent cure, which was effected by directing the remedial measures mainly to the relief of the digestive organs.

This patient had for many years been a free liver, gradually impairing the tone of his stomach and bowels, and disturbing the healthy functions of the nervous system, by imprudent eating and drinking and the use of tobacco. This it was, in my opinion, which caused the bronchial disease by sympathy, causing an inordinate amount of vitiated secretion, and extensive dilatation of the bronchial tubes.

Although the disease in this form is very formidable and exceedingly dangerous, the others to which I have referred appear to be more difficult

of management and cure. Scarcely can we expect, by any means now known, to control the disease when it has proceeded to such extremity as in the case related above, by sympathy with affections of the mucous linings of the large intestines and uterus. For some reason, of which I am ignorant, the derangements of the nervous system in these cases are more serious and persistent, while the remedies employed in the gastro-enteric disease fail to afford the same relief. There is, in general, as I have intimated, obstinate constipation to contend with, and there is also an engorgement or hyperæmia of the lining membrane of the uterine cavity and cervix, rendered more obstinate and persistent in most cases by displacement, and especially by prolapsus; but even when these evils have been to a considerable extent subdued, the bronchial disease is very apt to continue, causing large expectoration of frothy mucus, accompanied by frequent and feeble pulse, pain in the thorax, red and sometimes swollen tongue, and rapid loss of flesh and strength. Aloes, calomel, creasote, turpentine, strychnia, and various narcotic remedies, to allay nervous irritation, may produce beneficial effects, and sometimes give permanent relief, but in too many cases the disease goes on, and results in death for the want of means of cure which have not yet been discovered.

ART. VI.—*On Puerperal Tetanus.* By WM. A. GORDON, M. D. Read before the Bristol South District Medical Society at New Bedford, Mass.

THREE cases of puerperal tetanus have occurred in my practice during the last five years, and they are the only instances I have had the misfortune to meet with during my professional life of now thirty-five years.

The first case occurred in a healthy, temperate Irishwoman, the mother of four children. I was called to her on Sunday afternoon, August 7th, 1859. I learned that she had aborted on Wednesday at an early period of pregnancy, eleven days previous to my visit. The abortion was not attended with very much pain or flooding, and the woman kept her bed only till the afternoon of the next day, Thursday. Since that day she had attended to the duties of the household. Upon the Monday following she went a short distance to market, bringing home a heavy basket of provisions without unusual inconvenience. On Wednesday evening, a week after her abortion, she sat a considerable time at the outside door upon the door-sill, her feet resting upon the stone doorstep. On the following day, Thursday, she made complaint of pain in the head, which extended to the jaws and throat. She took a dose of castor oil which operated on Friday, and from that time till Sunday she was using various remedies prescribed by the old women and midwives. At the time of my visit (Sunday) she complained of a painful stiffness of the jaws, which came on first, and had extended to the muscles of the back, between the scapulæ, and to the throat.